REMARKS

The Office Action rejected all presently-pending claims 1, 2, 4, 5 and 15-19 under 35 U.S.C. 102(b), as being anticipated by Tung (US Patent 6,214,674; hereinafter Tung). Applicant has amended claims 1 and 5 to improve clarity based on Fig. 2A and the description of "the modifying doped region 270 may have a uniform width (w), as shown in Fig. 2A" in paragraph [0019] of the specification.. After entry of the foregoing amendments, claims 1, 2, 4, 5 and 15-19 remain pending in the present application, and reconsideration of those claims is respectfully requested.

Discussion of Office Action Rejections

The Office Action rejected claims 1, 2, 4, 5 and 15-19 under 35 U.S.C. 102(b), as being anticipated by Tung (US Patent 6,214,674; hereinafter Tung).

In response to the rejection to claims 1, 2, 4-5 and 15-18 under 35 U.S.C. 102(b) as being anticipated by Tung, Applicant amends claims 1 and 5 and respectfully traverses this rejection.

Applicant submits that neither the high-voltage metal-oxide-semiconductor devices as set forth in claims 1, 2, 4-5 and 15-19 are taught, disclosed, nor suggested by Tung or any of the other cited references, taken alone or in combination. The amended independent claims 1 and 5 are allowable for at least the reason that Tung fails to teach or disclose each and every features of the amended independent claims 1 and 5. As amended, claims 1 and 5 recite respectively:

Claim 1. A high-voltage metal-oxide-semiconductor (HV-MOS) device, comprising:

a substrate;

a gate dielectric layer on the substrate;

a gate on the gate dielectric layer;

a channel region in the substrate under the gate dielectric layer;

two doped regions as a source and a drain in the substrate beside the gate;

a field isolation layer between the gate and the two doped regions;

a drift region in the substrate under the field isolation layer located in one side of the at least one doped region, connecting with the channel region and the at least one doped region; and

a modifying doped region in the substrate **with a uniform width**, wherein the drift region and the modifying doped region together completely surround the doped regions and are doped with the same type dopant.

Claim 5. A high-voltage metal-oxide-semiconductor (HV-MOS) device, comprising:

a substrate;

a gate dielectric layer on the substrate;

a gate on the gate dielectric layer;

a channel region in the substrate under the gate dielectric layer;

two heavily doped regions as a source and a drain in the substrate beside the gate;

two lightly doped grade region under and surrounding the two heavily

doped regions respectively;

a field isolation layer between the gate and the two heavily doped regions;

a drift region in the substrate under the field isolation layer located in one side of the at least one lightly doped grade region; and

a modifying doped region in the substrate located in the other side of the at least one lightly doped grade region, **wherein the modifying doped region has a uniform width and the drift region and the modifying doped region together encircle the heavily doped regions**.

(***Emphasis Added***) Applicants submit that the claim patently defines over the prior art of record, for at least the reason that the prior arts fail to disclose at least these elements emphasized above.

In the present invention, the modifying doped region provided in each of claims 1 and 5, is located in the substrate at each side, other than the side with the drift region aside, of the doped region with a uniform width. That is, as shown in Fig. 2A of the present invention, the drift region 260 and the modifying doped region 270 are connected to each other and together encircle the doped region 240. Also, the distance between the boundary of the doped region 240 and the outer boundary of the modifying doped region 270 is uniform. Since the additional modifying doped region 270 has uniform width, the modifying doped region 270 can reduce the corner curvature of the depletion region of the S/D grade region 262, as shown in FIG. 2B. Hence, the electric field there can be reduced to increase the breakdown voltage of the HV-MOS devices according to this invention (paragraph [0025]). However, the drift region 60 having N- type ions

provided by Tung is not connected to each other for enclosing the source region 110 and the drain region 120. That is, Tung neither teach, disclose, nor suggest the source region 110 and the drain region 120 are encircled by the drift region 60. Furthermore, Tung also fails to teach or suggest that the drift region 60 has uniform width as encircling the source region 110 and the drain region 120.

Accordingly, the present invention as set forth in claims 1 and 5 should not be considered as being anticipated by Tung, and claims 1 and 5 should be allowable. For at least the same reasons, dependent claims 2, 4 and 15-19 patently define over the prior art as a matter of law, for at least the reason that these dependent claims contain all features of their respective independent claim.

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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1, 2, 4-5 and 15-19 are in proper condition for allowance and an action to such effect is earnestly solicited. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

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